UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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BOSTON, MASSACHUSETTS 02114-2023

March 8, 2004

Mr. Mark Krivansky
Engineering Field Activity Northeast
Naval Facilities Engineering Command
10 Industrial Hwy., Mail Stop #82
Lester, PA 19113-2090

Subject: Final Design Analysis, Technical Specifications, and Design Plans Report for Rubble Disposal Area, Operable Unit 2, Naval Air Station South Weymouth, Weymouth, Massachusetts

Dear Mr. Krivansky:

The United States Environmental Protection Agency (EPA) has reviewed the Final Design Analysis, Technical Specifications, and Design Plans for the Rubble Disposal Area (RDA), Naval Air Station South Weymouth, South Weymouth Massachusetts, dated July, 2003.

The responses were reviewed for consistency, technical accuracy and completeness. EPA comments are in Attachment 1 to this letter.

Please note that this document, in part or in whole, constitutes the Primary Document that is required to be submitted in the remedial design phase of the cleanup at the RDA site under the Federal Facility Agreement (FFA) for the Site. The Navy and EPA signed a Record of Decision for the RDA on December 31, 2003. Therefore, the Navy's submission at this time of any document relating to remedial design for this site is in compliance with CERCLA, the National Contingency Plan and the FFA. If you have any questions, please contact me at (617) 918-1382.

Sincerely,

Patty Marajh-Whittemore
Remedial Project Manager

Enclosure
cc: Dave Barney/Mark Leipert/ SOWEY NAS
Dave Chaffin/MADEP
Bryan Olson/LeAnn Jensen/Bill Brandon/Steve DiMattei/Rick Sugatt/EPA
John Rogers/SSTTDC
RAB Members
Peter Golonka/Gannett Fleming

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ATTACHMENT 1

GENERAL COMMENTS

1. Contrary to EPA's prior request, no information has been included in the design to document the intended use of the site. As stated previously, EPA would like the SSTTDC to verify that a roadway is no longer planned along the northern portion of the RDA before the design is finalized. The Design Analysis Report should include information documenting this (such as a letter from the SSTTDC) and that the planned use is open space (include the latest proposed zoning map).

2. The PCB excavation plan contains several errors related to the locations of the PCB hot spot samples BSD-4 and BSSD-46 and the scale of the excavated area. In addition, the new survey data has resulted in a change in the topography in the vicinity of the hot spots. Assessment of the new and correct information requires an adjustment in the orientation and size of the proposed excavation. Please refer to specific comments on the PCB excavation plan.

3. Please reference the signed Record of Decision, December 2003.

SPECIFIC COMMENTS

1. **Page 1, Section 1.1**: Please reference the signed Record of Decision, December 2003.

2. **Page 5, Section 3.1.1:** The last sentence in this section provides the groundwater elevation data across the site, but no datum is indicated. Since the elevations have been reduced by one foot compared to the Draft Final Design elevations, EPA assumes that the data must be referenced to the NAVD88 datum. Please confirm and edit the text accordingly.

3. **Page11, Section 3.2.2, Design Sections:** Please provide the datum for the elevations presented in this section. Since the elevations have been reduced by one foot compared to the Draft Final Design elevations, EPA assumes that the data must be referenced to the NAVD88 datum. Therefore, the footnote that refers to the groundwater elevation at the toe of the slope is incorrect. The elevation should be 118 feet NAVD88 (it was previously reported in the Draft Final Design as 119 NGVD). Please correct.

4. **Appendix H:** The Navy has not addressed EPA's prior comments and has made no substantial change in the flood analysis. Therefore, EPA again rejects the flood analysis as inadequate and repeats below the comments made previously.

In the first paragraph of the text, the Flood Insurance Rate Map (FIRM) is described. The most recent revision to the panel of interest is August 19, 1991 as stated in the text. However, in this revision, Panel 5 of 9 is actually number 250257-0005C (not 5B). Also, according to information on the revised FIRM, Panel 5, the limit of the detailed study was a line approximately one mile downstream of Liberty Street and approximately 1.5 miles downstream of the RDA (not 2,500 feet downstream as the Final Design text states). The reference to Libbey Industrial Parkway, as stated in the text of Appendix G, and as referenced in the floodway data sheet provided in Appendix G, refers to the detailed study area on Panel 6 of 9, map number 250257-0006C. (Note that Libbey Industrial Parkway is located north of Route 3 and more than two miles downstream (11,350 feet) of the limit of the detailed study area [shown as Section N-N] on the FIRM in the appendix.

In the third paragraph of the text in Appendix H the Flood Insurance Study is discussed. For reference, the information documenting the discussion should be presented in Appendix H as well. Note again that the limit of the detailed study area on Panel 5 (Section N-N) is 1.5 miles downstream of the RDA, not 2,500 feet downstream as the revised text states. Also note that the FIRM is based on NGVD-1929, not 1927; this was corrected in the text but not in any of the attachments in Appendix H. Furthermore, USGS stream gauge data for the Old Swamp River gauging station (#3001105600) indicate that the contributing area is 4.5 square miles, not 2.9 square miles as indicated in the design text. This gauging station is located N42o11'24" and W70o56'43", putting it just south of the Libbey Industrial Parkway. Data back to 1967 show a stream flow as high as 590 cubic feet per second (cfs) in 1984 (guage height of 5.02 feet) and a high gage height of 5.3 feet in 1997 at only 303 cfs.

Before approving the design for the RDA, EPA expects the Navy to submit a complete and thorough flood analysis using defensible data (such as the USGS gauging data; the complete flood insurance study; etc.) and including head loss calculations through the corrugated culverts. While EPA would like to support the Navy's conclusion that the 100-year flood plain is approximately 117 feet, NAVD88, EPA notes that the groundwater elevation on the east side of the RDA is 118 feet NAVD88, which casts serious doubt on the conclusion. Please provide the data and calculations necessary to allow EPA to approve the flood analysis.

5. **Specification 01332:** All of the Submittal Register items for Specifications 01200N through 01770N are missing. Please explain why or add these items back into the Submittal Register. Also, there are still items required by the specifications that are not included in the submittal register, including but not limited to Specification 02525N and 02921N. The Navy should review the specifications and correct the Submittal Register.

6. **Specification 01770N, Section 1.1:** Closeout submittals should be edited to include a Remedial Action Closeout Report.

7. **Specification 02525N:** With the addition of the gas probes and vents, there are now specification subsections in this specification with the same title but with different specifications for wells and for probes/vents. Specifically, sections 2.11 through 2.14 should apparently be applicable for probes/vents only. The Navy should review the specification sections and edit the titles so they properly identify the service they are applicable for.

   Also, there appears to be some ambiguity as to whether or not neat cement grout (Section2.4.2) or bentonite/cement slurry (Section3.4.4) will be used as an annular sealant. Both are specified but apparently only one is correct. See also sections 3.8.1 and 3.11.3.3. Please review and edit as appropriate.

   For Section 2.9.1, are the pipe joints meant to be threaded or welded? Both are specified.

   For Section 3.2.1, edit the text to require that the appropriate vertical datum be referenced.

   For Section 3.7.1, please reconcile this specification with Section 2.7.1 and Section 3.7.2 that apparently require differing heights for the casing. Please review and correct as appropriate.

   For Section 3.9, please require that the survey data reference the appropriate horizontal and vertical datum.

8. **Specification 02921N:** In Section 1.3, please correct the reference to Section 01332, "Submittals During Construction For Design Build".

9. **Sheet C-1:** The PCB hot spot excavation area is not shown at the proper scale. The 12-foot by 40-foot excavation is actually twice as wide and twice as long as shown. However, based on the coordinates given for the two hot spot samples (BSD-4 and BSSD-46) both hot spot locations are still located inside the hatched area depicted on this sheet. (The locations of both hot spot samples as shown on Sheet C-13 are incorrect.) Furthermore, based on the updated topography in the vicinity of the hot spot samples, the excavation should be oriented east-northeast to west-southwest (rather than north to south) so it would parallel the RDA slope. Further discussion of the recommended orientation and configuration of the PCB excavation is presented in reference to Sheet C-13.

   The revised topography has raised another concern. The RDA peninsula east of RDA-B4 extends well into the wetland at an elevation of less than 120 feet. This shallow fill material should be excavated from the wetland back to elevation 120 and the wetland reconstructed. The concern is that, with the proximity of the two peninsulas, erosion and deposition of soil will accumulate between the peninsulas and isolate the cove from the

rest of the wetland. Since there is relatively little waste material in this peninsula based on the new topography, it makes no sense, economic or otherwise, to pile more soil on top of it and cap it when that action will risk further damage to the wetland by isolating the cove. Please revise the landfill footprint by excavating the peninsula in accordance with this comment.

Regarding drawing Note #12, please edit this note and the design documents to require that : 1) the concrete footings associated with the lights be removed and consolidated on the landfill as appropriate; and 2) the approach lights be evaluated for the presence of mercury before they are disposed of at the RDA, or alternatively, dispose of them off site.

10. **Sheet C-4:** The two drawing notes previously presented in the Draft Final design have been deleted for this Final design; therefore, the reference to Note 1 on this sheet is obsolete and should be revised or deleted. Similarly, many subsequent sheets refer to Note 1 on Sheet C-4. These references are now also obsolete. Please edit the plans accordingly.

The remaining note on Sheet C-4, and the same note on subsequent drawings, is not correct. The 12-inch thick rip rap layer cannot be placed on top of the 18-inch thick select fill layer. The select fill layer will apparently have to be reduced to 12-inches thick. Please edit the note accordingly. Also, in all the sections showing the rip rap at the toe of the landfill slope, a separate geotextile should be used beneath the rip rap and the geotextile over the gas management layer should continue along the top of the gas management layer to the toe of the slope. Alternatively, wrap the gas management geotextile from the toe of the slope back up to beneath the rip rap.

The limited excavation shown along the wetland boundary on Section 3+00 is inappropriate because 1) the cap elevation will be lower than the surrounding wetland by as much as four feet based on the new topography shown on Sheet C-1; 2) it is likely that the elevated topography in the wetland is a result of erosion from the landfill, so it should be consolidated on the landfill; 3) if left as shown in Section 3+00, siltation will occur over time and bury the toe of the landfill; 4) runoff may accumulate on the landfill cap near the toe of the slope; and 5) it will not be compatible with the excavation required for the PCB hot spot, which will completely eliminate the soil at the toe of the slope based on the excavation required to properly address the hot spot. (Please refer to additional EPA comments on Sheet C-13 regarding the hot spot excavation.) The excavation along the wetland boundary at Section 3+00 should be designed to provide a continuous grade reduction into and through the wetland. Please edit the design accordingly.

On the swale side of Section 3+00, the rip rap on the landfill side is mistakenly shown as only one foot high when in fact it should be two feet high and extend to the top of the cap (see Detail #3 on Sheet C-10). Please correct.

On the swale side of Section 5+00, the top of the rip rap needs to be flush with the top of the landfill cap and flush with the new grade. It is presumed that this will also be a six-inch thick rip rap layer. Please edit the detail accordingly.

11. **Sheet C-5:** The rip rap lined swale on the west side of the landfill is missing from Sections 8+00 and 9+00. Please edit the sheet to include the rip rap swale in these sections. Also, no detail is provided for this swale. Please provide the appropriate detail. Will it be constructed like the northern swale detailed on Sheet C-10? A rough estimate of the drainage area for the southern swale suggests the storm flow rates would probably be similar to the northern swale. Please confirm.

12. **Sheet C-6:** In Detail #6, it is recommended that a geotextile be included between the compacted waste/fill and the gas management stone to prevent infiltration of soil into the gas management layer. Please edit the detail and the design accordingly.

13. **Sheet C-8:** On the site plan, what does "OS" refer to - it is not in the abbreviation table.

    Drawing note #1 is not correct. Existing topography and surface features are apparently taken from the 2003 survey. Please correct the note accordingly.

    Also, additional discussion of the LTMP and associated monitoring wells needs to occur before monitoring wells are removed or installed because the agreements could result in changes to this Design Sheet, including the retention of some existing monitoring wells not retained on this sheet.

14. **Sheet C-9:** It appears that the silt fence could cause a drainage problem or be susceptible to significant damage if located as shown at the southwestern corner of the RDA. The drainage channel along the southern end of the RDA will carry almost 8 cfs in a 100-year storm according to Navy's calculations. Most of this flow will come from the west. Consequently, it appears that the silt fence layout should be modified to flare out and open up to the west to allow the stormwater runoff from the west to reach the channel. It appears the current silt fence layout will be problematic even in a moderate storm. Consider revising the layout with the stormwater flow in mind.

15. **Sheet C-13:** For the PCB hot spot excavation plan, please verify that the coordinates provided for BSD-4 and BSSD-46 are the coordinates that were obtained when these samples were initially collected and surveyed and not the result of estimating the coordinates based on a location depicted on a map.

    Please note that the scale of the excavation plan is not 1 inch = 1 foot as the plan states. Also, the width and length of the excavation are not at the same scale. If the length is correct at 40 feet, the width is actually shown as 10 feet, although it should be 12 feet according to the drawing. More importantly, the locations of BSD-4 and BSSD-46 are

not located properly to scale on the excavation plan which: 1) is misleading, and 2) suggests that the excavation plan proposed is inappropriate. Both samples points are actually located in the upper left hand quadrant of the excavation plan shown. Based on the coordinates provided, BSD-4 is actually located 3 feet south of the northern extent of the excavation and 3 feet east of the western extent of the excavation. (As depicted, it is 9 feet south of the northern extent of the excavation and 4 feet east of the western extent of the excavation.) Also, based on the coordinates provided, BSSD-46 is actually located almost 14.5 feet south of the northern extent of the excavation and approximately 4.5 feet east of the western extent of the excavation. (As depicted, it is more than 28 feet south of the northern extent of the excavation and almost 8 feet east of the western extent of the excavation.)

For the reasons identified in this comment and because of the consequences of the revised topography at the site, and at the PCB hot spot in particular, (based on the latest survey data), the proposed excavation plan cannot be accepted. Because PCBs are thought to have reached locations BSD-4 and BSSD-46 by erosion from the landfill, it would be more appropriate to orient the excavation to run parallel with the topographic slope as revised by the latest survey data. That would orient the excavation from east-northeast to west-southwest, rather than north to south as shown on Sheet C-1. Furthermore, locations BSD-4 and BSSD-46 are much closer to the landfill boundary than suggested by the excavation plan on Sheet C-13. This is further reason to revise the excavation orientation and location. EPA recommends that the excavation be revised to cover the following area: 1) extend 5 feet upslope of BSD-4; and 2) extend 5 feet downslope of BSSD-46; and 3) extend 15 feet west-southwest from BSSD-46 (along the sideslope); and 4) extend 15 feet east-northeast from BSD-4 (along the sideslope). The resulting excavation will be a rectangle approximately 20 feet wide (downslope) by 36 feet long (sideslope).

16. **Sheet C-14:** The PCB hot spot is not correctly sized and located. Please refer to comments on Sheet C-1.

17. **Sheet C-15:** The transition from the landfill to the wetland along the Old Swamp River side of the landfill is not appropriate because the toe of the landfill cap is significantly lower in elevation than the surrounding wetland (by up to four feet). Please refer to related comments on Sheet C-4. The design at Station 3+00, and elsewhere along the boundary between the landfill cap and the wetland along the Old Swamp River, should be revised to create a continuous grade reduction from the landfill into the wetland.

18. **Sheet C-16:** The coordinate locations shown on this sheet are incorrect for all the gas probes and gas vents, based on the coordinate system shown on the base map. Please review and correct all the coordinate locations. Also, the elevation data needs to be verified because the elevations do not appear to coincide with the existing and finished grade elevations presented in this design.

In Drawing Note #2, please correct the text (add the words "at the" prior to the word "top") to clarify that the gas probes are installed no deeper than the top of the water table. As written, the text could be interpreted to mean the probe depth is two feet below the bottom of the waste or two feet below the top of the water table.

The addition of gas probes and gas vents will make it more difficult to accept the perimeter fence as an optional feature for this project. However, if it is not an optional feature, then a fenced-in landfill is not consistent with the anticipated future use of the site as open space/recreational. It may be possible to provide lockable covers for the gas probes and provide individual fences around each of the gas vents to maintain consistency between the future site use and the landfill design. This issue needs to be resolved before construction is completed for the landfill closure.

The location of the gas vents should generally be at the high elevations in each area of the landfill; however, the proposed vent locations are not located that way on this plan. Please explain why the proposed vent locations are considered appropriate, or else revise the locations to the high elevation in each area.

19. **Sheet C-17:** Please correct Drawing Note #2 as suggested in the comment for Sheet C-16. Note also that the depth specification in Note #2 is not consistent with the specifications in 02525N Section2.10, where only the groundwater elevation is referenced. Please review and correct as appropriate.

Please edit the description of the screen for the gas probes to include a specification for the screens. Are they to use the same detail as for the gas vents? If so, please edit the detail accordingly.

In Detail #8, the bottom of the pea gravel for the probes is shown as elevation 120 feet and the depth to the bottom of the screen is shown as five feet below grade. Based on the elevations of the probes as presented on Sheet C-16, the bottom of the lowest screen should be no lower than 125 feet NAVD. If this is approximately the seasonally high groundwater elevation, then the screen elevations are appropriate. Please verify that the screens will not be submerged for any of the proposed probe locations. Note also that the valve box is lockable.

In Detail #9, please clarify that the depth is to be measured from the top of the valve box, if that is what is intended.